

REMARKS

In response the Office Action:

Claim 1 stands rejected under 35 USC §102(e) as anticipated by U.S. Patent 6,052,285 to Hileman. The Applicant respectfully traverses this rejection.

The claimed subject matter is exemplified by heat sink 1100 comprising a heat pipe 61 that extends from a front surface 162 of a motherboard 160, using a through hole 166, to a back surface 164 of the motherboard 160. The heat pipe 61 is coupled with exoergic elements such as electronic components mounted on the front surface 162 of the motherboard 160. Both sides of the motherboard 160 are cooled using the heat pipe 61 and the through hole 166 in the motherboard.

Hileman discloses a radiation mechanism comprising a motherboard 14 having an opening 39, a print circuit board 20 having an integrated circuit package 18, and a heat pipe 26. An evaporator end 30 of the heat pipe 26 connects the integrated circuit package 18 mounted to the printed circuit board 20.

Hileman cools the *one* side of the printed circuit board 20 using the heat pipe 26. However, according to the claimed subject matter *both* sides of the motherboard 160 are cooled.

Furthermore, the only board that could possibly be cooled on *both* sides by Hileman's heat pipe 26 is the printed circuit board 14, which has the opening 39, but not any exoergic elements (electronic components).

Hileman does not accomplish cooling both sides of a board having exoergic elements, or use a through hole used according to claim 1. Hileman does not disclose the feature of claim 1, "a heat pipe including a first portion disposed on the front surface and a second portion disposed on the back surface and connected to the first portion using the through hole, wherein the first portion is connected to the exoergic part." With respect, claim 1 is not anticipated.

Claim 2 is indicated as rejected on the first page of the Action (form PTO-326) but is not specifically rejected under any section. The Applicant notes that Hileman does not disclose that a first portion of the heat pipe 34 runs parallel to a front surface while a second portion of the heat pipe runs parallel to a back surface of either circuit board 20 or of motherboard 14.

Claims 3-9 were rejected for obviousness-type double patenting over claims 1-18 of U.S. Patent 6,519,149. This rejection is respectfully traversed.

Claim 8 has been amended to overcome the rejection.

The applied claims mention a heat pipe (e.g. in claim 5) but do not disclose the feature of the instant claims 3-7 which include the feature of claim 1, i.e., that a heat pipe has portions on both sides of a board. The Examiner has not explained why the person of ordinary skill would added that feature to the subject matter of the '149 claims.

Neither is it apparent why that person would have added the subject matter of new claim 10.

Respectfully submitted,

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